# PATENT SPECIFICATION (11) 1 380 316

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(21) Application No. 8518/72 (22) Filed 24 Feb. 1972
(61) Patent of Addition to No. 1 201 183 dated 1 Nov. 1968
(23) Complete Specification filed 12 Feb. 1973
(44) Complete Specification published 15 Jan. 1975
(51) INT. CL.² C12C 11/00
C12G 1/02
(52) Index at acceptance
C6E 3
C6F 1A

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(19)


## (54) IMPROVEMENTS IN OR RELATING TO FERMENTATION

(71) We, BRITISH VISQUEEN LIMITED, of Imperial Chemical House, Millbank, London SW1P 3JF, a British Company do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:

This invention relates to fermentation and is particularly concerned with the production of wine, beer, cider or other alcoholic drink on a domestic scale by fermentation.

Specification No. 1 201 183 describes a method of fermenting liquids in which the fermentation reaction is carried out in a disposable bag or sack made from a waterproof sterile material (such as a plastics material) which does not impart flavour to the materials used in the fermentation or to the product of the fermentation and the neck of the bag or sack is sealed in a manner which prevents air from entering the bag from outside but allows gases produced by the fermentation to escape from inside the bag.

Specification No. 1 202 183 also describes a fermenter comprising such a disposable bag or sack, a support for the bag to give it the necessary shape when it holds fermenting liquid, and means for sealing the neck of the bag. Thus the neck portion of the bag may be folded to close the bag and the closed neck held against a portion of the support by means of an elastic band passing round the support, whereby the elastic band functions as a non-return gas outlet valve.

The term "bag" will hereinafter be used to include bags of large size, referred to in the said specification as "sacks".

According to the present invention, a fermenter comprises in combination a plastics-film bag having a narrowed neck terminating at an open mouth, and a means for releasably closing the neck during a fermentation reaction conducted within the bag, substantially so as to prevent air from entering the bag from outside but to allow gas produced by the fermentation reaction to escape from inside the bag, said means comprising a substantially rigid supporting member and an elastic band for holding the bag neck closed against the supporting member.

The neck of the plastics-film bag is preferably centrally located, but it may be offset to one side if desired, for example to simplify manufacture or to effect economies in the use of the plastics material. One or more suspension holes may be provided in a sealed-off portion or portions of the bag adjacent to the mouth to allow the bag to be suspended for manipulation at any stage, or for the fermentation process.

The bag is preferably made from tubular film of the plastics material, produced by the extrusion-blowing method. Such bags may be made by a continuous process in which successive bag units are sealed and severed from the length. A seal of the desired shape is formed at the mouth end of the bag. The other end may be sealed by a conventional, straight seal across the whole width of the tubing, or the seal may be of other shape if desired. Each bag is preferably severed from the length simultaneously with, or after, the formation of the seals. The seals, themselves are preferably made wide enough to minimise the risk of leakage even should the filled bag be suspended without external support for the seals. The bag should be generally of robust construction; the optimum thickness of the film used for making it will depend largely on the size of the bag, but will generally be in the higher ranges of thickness of conventional packaging films appropriate to the size of the bag. When suspension holes are to be provided, the seals at the mouth end of the bag, or parts of them, are

1380316 PROVISIONAL SPECIFICATION
2 SHEETS This drawing is a reproduction of the Original on a reduced scale
Sheet 1

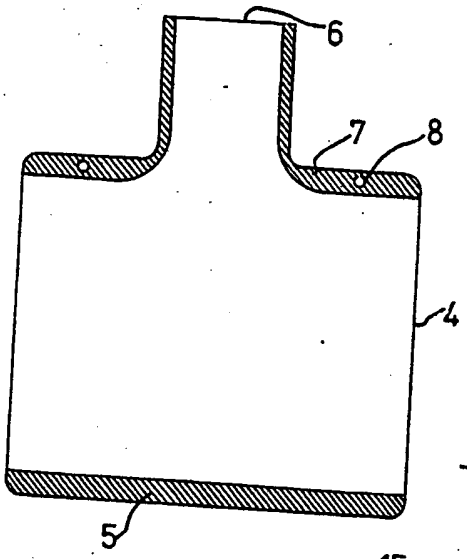


FIG.1.

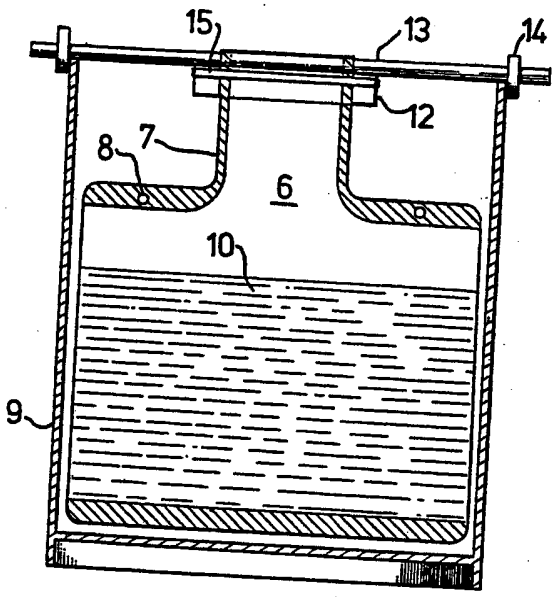


FIG.2.

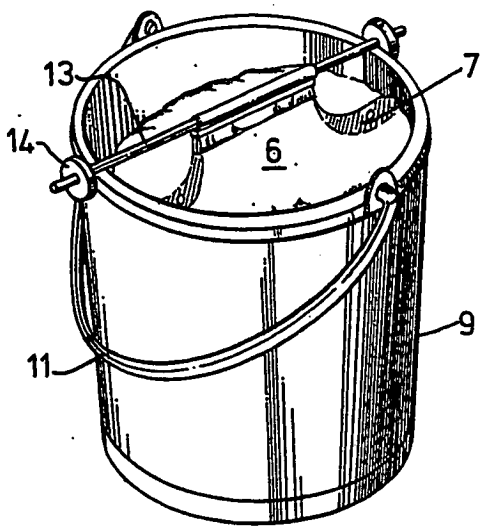


FIG 3